



**Solid-plastic models produced by 3D printers at Rock Island Arsenal help speed prototyping and reduce costs.**

## Rock Island, Ill.

### Modeling For Manufacturing

IF a picture is worth 1,000 words, then a good model is worth 10,000. That play on a familiar saying has become the unofficial motto of Rock Island Arsenal's Engineering Services Directorate.

As a center of technical excellence for weaponry and support equipment, Rock Island Arsenal manufactures gun mounts, artillery carriages, recoil mechanisms and other equipment for the armed forces, and assembles tools, sets, kits and outfits to support equipment in the field.

The engineering staff can readily produce scaled-down or actual-size models of items ranging from a spare part to an entire weapon system. Process planners, engineers, designers and others involved in the manufacturing process can study the models and use them to find ways to produce items faster, better and cheaper.

High-quality models make

rapid prototyping possible by putting a concept into solid form. They also provide a physical representation of an item to supplement and explain a drawing or description. Another benefit is their mobility. Solid models can be small enough to be carried in a suitcase, while detailed virtual models can be sent anywhere in the world by electronic mail.

Until recently, the lamination object machine was the state of the art in solid modeling. The LOM produces highly accurate three-dimensional bonded and stacked paper representations that have a wood-like appearance. While the LOM is still in use and will continue to play an important role in solid modeling for years to come, it's been supplemented by new machines.

One of these is called a "3D printer" — even though its medium is plastic rather than paper. While the LOM has excellent resolution and can produce one-piece models, the 3D printer is much faster, easier to use and can be set up to run unattended.

Though nothing beats a good solid model, advances in computer-aided design technology have made virtual models more realistic than ever. Using the latest CAD hardware and software, technicians can rotate models on-screen to view them from any angle. They can also color-code different parts or put models into motion to find interference points, and make adjustments in the manufacturing process to prevent wear or breakdown in the finished product.

Modeling makes it possible to move from idea to manufactured item, but what if you want to move from item to model? This process of "reverse engineering" has become easier and more accurate, thanks to a portable 3D digitizer arm — a device that can be moved over the surface of an item to scan all the points that it crosses and convert that data into a CAD model that in turn can be made into a solid model.

More information on Rock Island's modeling and engineering capabilities can be found on the Internet at [www.ria.army.mil](http://www.ria.army.mil). — *RIA Public Affairs Office*

## Hanau, Germany

### ADA Continues Presence in Gulf Region

SOLDIERS of the 5th Battalion, 7th Air Defense Artillery, have recently returned from a deployment to Kuwait and Saudi Arabia, but their commitment to protect and serve in the Persian Gulf region continues.

"Deploying and training in

**Troops from Battery D, 5th Battalion, 7th Air Defense Artillery, deployed to Ali Al Salem air base in Kuwait from their home station in Babenhausen, Germany.**

the Middle East is not like any other rotation," said 69th ADA brigade commander COL Jack E. Faires, speaking of his unit's presence in the region. "You always have to be at your best, because you're just miles from the Iraqi border. But because that's where the real-world mission is, the troops serving there have the highest morale of anyone in the brigade."

Ten years have passed since the Gulf War, but American soldiers still guard the area and help to keep peace in the region. For ADA units in the area, Patriot missile sites remain in a constant state of readiness, able to launch within five minutes of an attack.

"We were sitting 10 minutes from Iraq," said CPT Alan A. Wiernicki, commander of 5th Bn.'s Battery A. "The threat is higher there because of its proximity to the border. Part of the ADA mission is to protect friendly aircraft that routinely patrol the danger zone."

To keep its sharp edge, Wiernicki said, his battery ran nightly SCUD drills and stayed on top of its CTT training and weapons qualification. But the possibility of Iraqi aggression wasn't the only concern.

"You get to standing on those vehicles for too long and the soles of your boots will melt," said SFC Willie L. Jackson of Btry. C. "You have to watch out for each other, because it's too easy to become a heat casualty."

One of the biggest chal-

SGT Annette B. Andrews



lenges during the war was dealing with safety and maintenance issues created by a desert environment. Because 69th ADA units had participated in the conflict, the brigade has common-sense training and standard operating procedures in place to ensure soldier safety and to keep vehicles and equipment in the highest state of readiness, despite the heat and desert sand.

"We were relieved by the 5th Bn., 52nd ADA, from Fort Bliss, Texas, but we resume responsibilities for the region again in the fall of 2001," Faires said. At that time, the brigade's 6th Bn., 52nd ADA, will transition into the familiar territory guarding the skies against weapons of mass destruction. — *SGT Annette B. Andrews, 69th ADA PAO*

#### Vicenza, Italy

### U.S.-Ukraine Armies Continue Building Ties

TWELVE Ukrainian noncommissioned officers recently visited American NCOs here at Caserma Ederle as part of their

ongoing association and training with American soldiers. The visit would have

been unheard of a decade ago, but the 11-day visit marked the second time that the Southern European Task Force and the Ukrainian army have worked together.

In March SETAF sent a group of NCOs to help establish an NCO academy at the Yavoriv Training Area, Ukraine. That visit helped lay the foundation for a relationship that will be beneficial to both armies as the two countries continue to work together in peacekeeping missions in Bosnia-Herzegovina and Kosovo, said Ukrainian army Sgt. Nabyt Sviapostav.

"We didn't know a lot about U.S. soldiers," he said. "The visits help us understand what they do and how they train."

The visiting NCOs saw the training firsthand at the 1st Battalion, 508th Airborne Battalion Combat Team's Expert Infantryman Badge training and testing site.

"What we learn here will help us take care of our own soldiers," Sviapostav said. "The Americans have been very helpful in teaching us and showing us how to do things."

Instructing the Ukrainian NCOs was not difficult, said SGT Bryan Reisch, an EIB instructor. "They came in here and asked how to do the tasks," he said. "We showed them once, they watched and they knew how to do it."

Learning the tasks was easy, Sviapostav said. Learning how to teach someone else is the tough part.

"We really wanted to see how they prepared their soldiers and how the American NCOs did the training," Sviapostav said. "Just going through and learning all the soldiering stuff your soldiers do will help us train our own soldiers and make Ukraine's army



**SETAF's SSG Richard Rodriguez looks on as Ukrainian Staff Sgt. Andrii Sharvi practices aiming an AT-4. Twelve Ukrainian NCOs visited Caserma Ederle in Vicenza, Italy.**

a little better." — *SGT Ronnie Isaac, SETAF PAO*

#### Schofield Barracks, Hawaii

### Soldiers Aid East Timor

SOLDIERS from Company A, 84th Engineer Battalion, part of the 25th Infantry Division, were in the East Timor capital of Dili for 90 days this summer to rebuild schools that were burned in August 1999 by Indonesian militia gangs when the East Timorese people voted for independence.

Militia gangs showed no mercy and left no structure unscathed in their rampage. Every school in the city was burned. Yet the East Timorese refused to let their children go

uneducated, even if that meant holding classes in roofless structures that give no shelter from the all-too-frequent afternoon showers that interrupt lessons and soak textbooks and supplies.

After viewing the demolished city, the engineers quickly assessed the damage done to two of the schools they would be repairing, and soon went to work.

East Timor resident Lamberto Gutierrez said the East Timorese were grateful for the assistance but are also eager to do their part in the reconstruction effort.

"Americans do all they can to help our little ones," he said. "So we do all we can to help Americans." — *SGT Dale Terry, U.S. Army, Pacific, PAO*

